

REMARKS

Applicants have carefully reviewed the Office Action dated May 16, 2007. Applicants have amended Claims 1 and 31 and added new Independent Claim 48 to more clearly point out the present inventive concept. Reconsideration and favorable action is respectfully requested.

Claims 1-18, 21, 23-24, 29 & 31-44 stand rejected under 35 U.S. C § 103(a) as being unpatentable over U.S. Patent No. 6,310,554 to *Carrell* ("*Carrell*") in view of U.S. Patent No. 6,232,882 to *Hed* et al ("*Hed*"). This rejection is respectfully traversed with respect to the presently presented claims.

Claims 1 and 31 have been amended to clarify that the electromagnetic receiver receives both a time signal and signals from storm activity. The receiver is operable to receive both a time signal transmitted and received on a fixed stable carrier frequency as well as the electromagnetic signals produced by the lightning strikes. Both the time signal and the electromagnetic signals produced by the lightning strikes are received on a narrow, stable frequency. As such, the processor is operable to distinguish between the received time signal and the received electromagnetic signal produced by the lightning strikes.

The *Carrell* reference utilizes a transducer sensor (see reference number 26 on Figure 1) to detect changes in barometric pressure. Signals from the transducer sensor are sent to a microprocessor to analysis. The microprocessor computes a four point derivative of the barometric pressure measured over four minutes. When the derivative is negative, a low pressure front is approaching. The microprocessor correlates the magnitude of the derivative with a magnitude of the approaching storm. *Carrell* does not contain a teaching or suggestion for reading electromagnetic energy produced from lightning. Thus, *Carrell* fails to disclose the limitations as set forth in the currently presented Claims 1 and 31.

The Examiner is combining *Hed* to cure the deficiencies noted in *Carrell*. More specifically, the Examiner is combining *Hed* with *Carrell* to teach a weather detection system that may process and detect both electromagnetic signals produced by lightning strikes and tornadoes. *Hed* teaches a tornado detection system that uses two RF detection circuits to detect

AM white noise generated by tornado activity. The receivers operate in parallel at a sampling interval longer than the time it takes for a single lightning strike to occur but shorter than the time typically between strikes in a given lightning event. Additionally, the receivers operate at a frequency range of 30MHz to 60MHz. Thus, *Hed* is teaching a system designed to avoid lightning detection.

As such, the combination of *Carrell* and *Hed* fails to teach “an electromagnetic receiver that receives digital time signals and electromagnetic signals produced by lightning, wherein the digital time signals are transmitted and received at a stable fixed carrier frequency and the electromagnetic signals from the lightning are concentrated about the fixed carrier frequency.” (See Claim 1) Neither *Carrell* nor *Hed*, taken singularly or in combination, teaches the use of a processor operable to distinguish the electromagnetic signals produced by lightning from the time signals. Furthermore, *Hed* is teaching away from a system designed to detect severe weather based on lightning. Therefore, Applicants respectfully request withdrawal of the 35 U.S. C § 103(a) rejection of Claims 1 and 31.

Claims 2-18, 21, 23-24 and 29 depend from, and further limit, Claim 1. Claims 32-44 depend from and further limit Claim 31. These claims are allowable for at least the same reasons as the claims from which they depend.

Claims 19-20 stand rejected as being unpatentable over *Carrell* in view of *Hed* in further view of U.S. Patent No. 6,164,130 to *Pabst* et al (“*Pabst*”). This rejection is respectfully traversed with respect to the currently presented claims.

Claims 19-20 depend from and further limit Claim 1 and are allowable for at least the same reasons as Claim 1. The addition of *Pabst* does not cure the deficiencies of the *Carrell-Hed* combination as noted hereinabove. Therefore, Applicants respectfully request withdrawal of the 35 U.S. C § 103(a) rejection of Claims 19-20.

Claims 22, 25-28, 30 & 45-47 stand rejected as being unpatentable over *Carrell* in view of *Hed* in further view of U.S. Patent No. 6,351,218 to *Smith* (“*Smith*”). This rejection is respectfully traversed with respect to the currently presented claims.

Claims 22, 25-28 and 30 depend from, and further limit, Claim 1. Claims 45-47 depend from, and further limit, Claim 31. These dependent claims are allowable for at least the same reasons as the claims from which they depend. The addition of *Smith* does not cure the deficiencies of the *Carrell-Hed* combination as noted hereinabove. Therefore, Applicants respectfully request withdrawal of the 35 U.S. C § 103(a) rejection of Claims 22, 25-28, 30 & 45-47.

New Independent Claim 48 has been added to more clearly point out that the portable weather detection device of the instant application is operable to receive an electromagnetic signal and time information at 60KHz. The system is further operable to establish an alarm threshold based upon a dynamic weighting of both changes in atmospheric pressure and received electromagnetic signals produced by lightning. The primary purpose of this is to create a voting function to determine if an alarm threshold has occurred.

Applicants have now made an earnest attempt in order to place this case in condition for allowance. For the reasons stated above, Applicants respectfully request full allowance of the claims as amended. Please charge any additional fees or deficiencies in fees or credit any overpayment to Deposit Account No. 20-0780/LGRE-26,460 of HOWISON & ARNOTT, L.L.P.

Respectfully submitted,
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